FUEL CELL WITH RECOMBINATION CATALYST

ABSTRACT OF THE DISCLOSURE

A hydrogen-oxygen fuel cell operates with greater safety if a leak develops between the anode and the cathode sides of the fuel cell allowing hydrogen and oxygen to become mixed on whichever side operates at the lower pressure. A recombination catalyst is disposed within the fuel cell to catalyze the recombination reaction of hydrogen and oxygen to form water and prevent the formation of an explosive mixture. The hydrogen-oxygen recombination catalyst is disposed in a hydrogen distribution system, an oxygen distribution system, or a combination thereof. Suitable recombination catalysts include platinum or alloys thereof, palladium, gold, tin, and combinations thereof, with or without platinum. Still other suitable recombination catalysts include, for example, noble metals, nickel-paladium, and nickel oxides. The recombination catalyst may be mixed with a bonding agent, such as polytetrafluoroethylene, so that the recombination catalyst will adhere to surfaces within the hydrogen and oxygen distribution systems.